

REMARKS

Claims 1- 14, 16, 18 and 26 are currently pending in the application. Claims 16, 18 and 26 are hereby amended and claims 15, 17, 19-25 and 28-31 are hereby cancelled. The foregoing separate sheets marked as "Listing of Claims" show all the claims in the application, with an indication of the current status of each.

Cancellation of claims herein is without prejudice and is intended to accelerate prosecution of the application by simplifying outstanding issues. The Applicant reserves the right to pursue the subject matter of the cancelled claims, or claims to other disclosed subject matter, in one or more continuation applications.

Claim Rejections: 35 USC § 101

Claims 1-26 stand rejected under 35 USC §101, purportedly being drawn to non-statutory subject matter. This rejection is traversed.

The guidelines presented in *in re Bilsky* [No. 2007-1130 (Fed. Cir. Oct. 30, 3008)] indicate that a two-branched inquiry is to be applied to process (i.e. method) claims, in that "...an application may show that a process claim satisfies §101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article."

Independent claims 1, 6 and 14 have hereby been amended to clarify that several steps of the method of the present invention are carried out using a particular machine i.e. a computer. Dependent claims 5, 15, 17, 19, 21, 23 and 25 have been amended in a corresponding fashion. Applicant submits that the subject matter of these claims is thus tied to a particular machine.

It is Applicant's understanding that recent USPTO guidelines indicate that claims providing a useful, concrete and tangible result are also directed to patentable subject matter. The claims satisfy this requirement since the methods of the invention provide concrete, tangible outputs (plots and tables) that are clearly useful (used for determining whether or not compounds in a mixture interact, and, depending on the result, adjusting the amounts of compounds in the mixture, e.g. to avoid health problems associated with toxicity). Therefore, Applicant respectfully submits that all claims of the application are directed to patentable subject matter.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal

of this rejection.

Claim Rejections: 35 USC § 112, second paragraph

Claims 14-26 stand rejected under 35 USC § 112, second paragraph, as indefinite.

Examiner states that it is unclear 1) how the 2 equations differ and 2) the meaning of the symbols in the equations. Claim 14 has hereby been amended to remove the equations, thereby making moot this rejection.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claim Rejections: 35 USC § 103(a)

Claims 1-26 stand rejected under 35 USC § 103(a) as unpatentable over Gennings 1998 in view of Gennings 1997. This rejection is respectfully traversed.

Claim 1 requires in step d and claim 6 requires in step c that at least one subset of agents is removed from the group or mixture that is being analyzed. Examiner states that Gennings 1998 fails to teach that when the subsets of two agents are removed, the remaining agents (plural) must maintain their relative ratios (i.e. fourth step-step d of claim 1; see Examiner's remarks in the first full paragraph of page 8 of the Office Action). However, Examiner contends that this feature is taught in Gennings 1997. **This is incorrect.** Examiner refers to the Figure caption of Figure 1 of Gennings 1997, and states incorrectly that Gennings 1997 teaches removal of a subset of chemicals from a mixture, in which the relative ratios of agents remaining in the mixture remain the same.

Figure 1 of Gennings 1997 is a hypothetical example (made to illustrate a dose threshold boundary on a response surface) of a mixture of four chemicals where the dose ranges for Chemicals 1 and 2 vary across the grid. In Figure 1a, Chemicals 3 and 4 are set to 0. This is not a fixed ratio case since the ratio of Chemicals 1 and 2 vary over the surface while chemicals 3 and 4 are fixed at 0. Similarly, in Figure 1b, Chemicals 3 and 4 are set to 0.1. So although Chemicals 3 and 4 are fixed at equal proportions, the ratio, between e.g. Chemical 1 and Chemical 3 changes as Chemical 1 varies across the surface. In contrast, in a fixed-ratio design such as that required in claims 1 and 6 of the present application, the relative ratios of the chemicals in the mixture are fixed everywhere, i.e. the fixed ratio mixture defines a ray instead of a response surface.

An illustration of a fixed-ratio mixture is in paragraph [0053] of the published application which is the legend for Figure 2 in the application. Here there are five chemicals with the fixed ratios of

(0.040: 0.002: 0.031: 0.102: 0.825).

That is, the first chemical is 4% of the mixture, the second chemical is 0.2% of the mixture, the third chemical is 3.1% of the mixture, the fourth chemical is 10.2% of the mixture, and the fifth chemical is 82.5% of the mixture. The only thing that changes is the total dose of the mixture, but the ratios remain constant. Notice that, for chemicals 1 and 2, the mixture includes $4/(0.2)=20$ times more of chemical 1 compared to chemical 2. Also described in this legend is the mixing ratios where the fifth chemical (malathion) was removed from the mixture and “the remaining pesticides are at the same relative ratios as given in the full ray”. The mixing ratios of the four remaining chemicals are given as

(0.2286: 0.0114: 0.1767: 0.5833).

That is, chemical 1 is approximately 22.86% of the mixture, chemical 2 is approximately 1.14% of the mixture, chemical 3 is approximately 17.67% of the mixture, and chemical 4 is 58.33% of the mixture. (The ratios are only approximate due to mixing errors in the construction of the mixture.) Thus, again for chemicals 1 and 2, chemical 1 is $22.86/1.14 \approx 20$ times the amount of chemical 2 in the mixture. The same is true for the relative proportions of all chemicals in the mixture: the relative ratios remain the same both before and after a subset of chemicals is removed. In other words, relative proportions of all four chemicals relative to each other are the same in the full and reduced mixtures. This concept of full and reduced mixtures at the same relative proportions is not described or taught in either Gennings et al (1997) or in Gennings et al (1998). Therefore, no combination of Gennings 1997 and Gennings 1998 can render the subject matter of the present application obvious.

Claim 14 has hereby been amended to include, among others, step “c” of removing a subset of agents from said group or mixture, wherein relative ratios of amounts of agents remaining in said group or mixture stay the same as in the fixed-ratio ray design such that

$\frac{a_{i(full)}}{a_{j(full)}} = \frac{a_{i(reduced)}}{a_{j(reduced)}}$ where $a_{i(full)}$ is a proportion of the i^{th} chemical in said group or mixture, $a_{j(full)}$

is a proportion of the j^{th} chemical in said group or mixture, $a_{i(reduced)}$ is a proportion of the i^{th} chemical in said remaining agents, and $a_{j(reduced)}$ is the proportion of the j^{th} chemical in said remaining agents. This (and other) amendments to claim 14 do not add any new matter to the application since the subject matter was taken directly from now-cancelled claims 15, 17, 19, 21, 23 and 25.

Therefore, independent claims 1, 6 and 14 now each recite subject matter that is clearly not obvious in view of Gennings 1997 or Gennings 1998, or any combination thereof.

In view of the foregoing, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Other matters

Applicant notes that, in the Office Action dated, October 29, 2009, Examiner failed to act on pending claims 30-31 of the application.

In order to accelerate prosecution, claims 30 and 31 are hereby cancelled.

Concluding Remarks

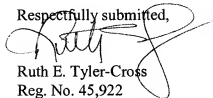
In view of the foregoing, it is requested that the application be reconsidered, that claims 1- 14, 16, 18 and 26 be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at 703-787-9400 (fax: 703-787-7557; email: ruth@wcc-ip.com) to discuss any other changes deemed necessary in a telephonic or personal interview.

If an extension of time is required for this response to be considered as being timely filed, a conditional petition is hereby made for such extension of time. Please charge any deficiencies in fees and credit any overpayment of fees to Attorney's Deposit Account No. 50-2041.

Whitham, Curtis, Christofferson and Cook, P.C.
11491 Sunset Hills Road, Suite 340
Reston, VA 20190
703-787-9400 (Telephone)
703-787-7557 (Facsimile)

Respectfully submitted,



Ruth E. Tyler-Cross
Reg. No. 45,922